1894MNRAS..54..438R

The nebula ♅ IV. 36 (*G. C.* 1,270) has a stellar nucleus, with a small companion star close to it on the south side, and this double nucleus is surrounded by cloud-like streaky nebulosity.

The distance between the centres of the nebulæ is about 15 minutes of arc, and there are indications that the two nebulæ are connected together with very faint nebulosity, but there is no spiral form (as suggested by Lord Rosse) visible in either of them.

The sky within a radius of about half a degree of these nebulæ is remarkably void of stars, but beyond this distance, both *preceding* and *following*, the stars are crowded on the plate.

Photograph of the Nebula M 74 *Piscium.*

By Isaac Roberts, D.Sc., F.R.S.

The photograph of the nebula M 74 *Piscium*, R.A. $1^h\ 31^m$, Decl. 15° 15′ north, was taken with the 20-inch reflector on 1893 December 9, with exposure of the plate during three hours and forty minutes, and the copy now presented is enlarged to the scale of 1 millimetre to 15 seconds of arc.

The nebula is No. 628 in the *New General Catalogue* and 372 in the *General Catalogue.*

Sir J. Herschel (*G. C.* 372, p. 52) states as the result of eleven observations that it is a globular cluster, faint, very large, round, pretty suddenly much brighter in the middle, partially resolved.

Lord Rosse (*Phil. Trans.* 1861, p. 711) designates it as a spiral nebula with the centre formed of stars, and several stars visible through the nebula. A marginal sketch shows the spiral form, and in the *Observations of Nebulæ and Clusters of Stars*, p. 21, another marginal sketch is given which shows a nucleus and five stars involved in the spirals.

The photograph shows the nebula to be a very perfect spiral, with a central stellar nucleus and a 15th mag. star close to it on the south side. The convolutions of the spiral are studded with many stars and star-like condensations, and on the *north preceding* side there is a partial inversion of one of the convolutions, which conveys the idea of some irregular disturbing cause having interfered with the regular formation of a part of that convolution.

The photograph cannot be adequately described, it must be examined before it can be fully appreciated.

Downloaded from http://mnras.oxfordjournals.org/ by guest on March 22, 2016

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System

1894MNRAS..54..438R

Note on the Solar Eclipse of 1598. By J. L. E. Dreyer, Ph.D.

On 1598 February 25 (March 7) an eclipse of the Sun took place which was extensively observed in Germany. At that time Tycho Brahe, who had left Denmark in the previous summer, was staying at Wandsbeck in Holstein, close to Hamburg, and observed the eclipse there. His assistant, Longomontanus, observed it at Rostock, and a former assistant, Christen Hansen, observed it in Jutland. It is, however, more interesting that the eclipse was watched at the deserted observatory on the island of Hveen with one of the four great instruments which had been left behind on Tycho's departure from the island, and which were not removed till towards the end of 1599. As I had last year an opportunity of examining the particulars of this observation in the original MS. volume of observations from the year 1598, in the Royal Library of Copenhagen, a short account of it may not be uninteresting to the Society, particularly as some writers seem to have doubted that the eclipse was actually observed at Hveen.

In a letter to Magini, dated from Dresden 1598 November 28,* Tycho gives the following particulars about this eclipse :

"Martii d. 6. Eclipsis ⊙ medium $11^h 5'$ a.mn. Uraniburgi in Dania. Magnitudo Eclipsationis ibidem apparuit a parte superiori intra 9 et 10 digitos."

He adds that all this agrees well with his own tables. In another letter to Magini from Prague, of 1601 January 24,† Tycho again alludes to this eclipse as having been observed at Uraniborg with one of the instruments left there. He refers for details to a paper enclosed in the letter, but this paper appears to have been lost. Some further particulars are, however, given in a letter to Kepler of 1599 December 9.‡ In this Tycho first states that according to his own tables the magnitude of the eclipse should be 9½ digits, and continues : "qua etiam quantitate Sol deficere a quodam ex meis Uraniburgi isthic (ut 4 residuorum instrumentorum, quae prae magnitudine efferri tam cito nequibant, curam haberet) relicto studioso deprehensus est, et tempora alias per armillam aequatoriam, 18 pedum in diametro, a principio usque ad finem (fuit enim toto isthic tempore serenum) meae restitutioni apprime congruentia coelitus denotata sunt, quae erant ejuscemodi, ut deliquium inciperet isthic h. 10.10′, finem haberet h. 12.19′, ideoque medium existeret h. 11.12′."

In his book on optics (*Paralipomena in Vitellionem*, cap. xi.) Kepler discusses the observations of this eclipse, and states that it was by a student of Tycho's observed to commence at $10^h 3^m$ and to end at $12^h 32^m$, the duration being $2^h 29^m$. In the *Tabulae Rudolphinae* (pp. 110, 111) this eclipse is used as an

---

* *Carteggio inedito di Ticone Brahe . . . con G. A. Magini*, p. 222.

† *Ibid.* p. 238.

‡ *Opera Omnia*, ed. Frisch, i. 225.

Downloaded from http://mnras.oxfordjournals.org/ by guest on March 22, 2016

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System